

Evidence

Harry Nobel

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Barry Nobel

The purpose of this paper is to explain the syntactic properties of a small class of verbs: think, believe, assume, suppose, anticipate.

1. The transformation Neg Raising, also called Neg Hopping or Neg Transportation, is usually invoked in order to explain the synonymy of sentences such as the following:

- (1) I think that he didn't leave.
- (2) =I don't think that he left.

Since (1) and (2) are paraphrases, it is assumed that they share identical deep structures. The difference in the surface structures of the two is that (2) has undergone the transformation, while (1) has not. Neg Raising seems to be sensitive to Ross' Complex Noun Phrase Constraint, since all factive verbs block it (Kiparsky and Kiparsky, to appear).

- (3) I regret that he didn't leave.
- (4) ≠I don't regret that he left.

However, not all non-factive verbs may undergo Neg Raising.

- (5) I charge that Nixon doesn't want to end the war.
- (6) ≠I don't charge that Nixon wants to end the war.

There are only a very few verbs that do permit Neg Raising, and these comprise the set which I will call evidentials.

2. Parenthetical constructions are tags of the type I think added to any declarative sentence.

- (7) He left, I think.

Factive verbs cannot appear in parenthetical constructions.

- (8) *He left, I regretted.

But non-factive verbs can, only when accompanied by pause plus secondary stress on the parenthetical verb.

(9) "He left," I

{ maintained
charged
asserted }

In contrast, evidential verbs in parenthetical constructions need no such suprasegmental marking.

(10) He left, I

{ thought
believed
supposed }

.1

3. Agentivity of evidential verbs is ambiguous when Neg Raising does not apply.²

(11) John supposed that he didn't leave.

Sentence (11) can be understood as John actively conjuring the thought, or as the thought creeping in on John. However, the paraphrase of (11) with Neg Raising can only be understood non-agentively.

(12) John didn't suppose that he left.

This becomes clear in pro-agentive contexts, such as certain adverbs.

(13) John stupidly supposed that he didn't leave.

(14) #?John didn't stupidly suppose that he left.

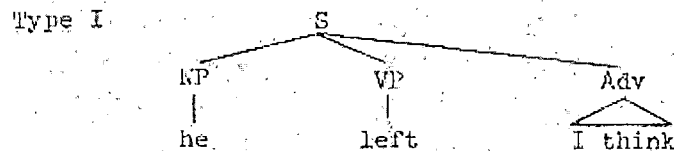
Placing evidentials into progressives also forces an agentive interpretation of their surface subjects.

(15) John was supposing that he didn't leave.

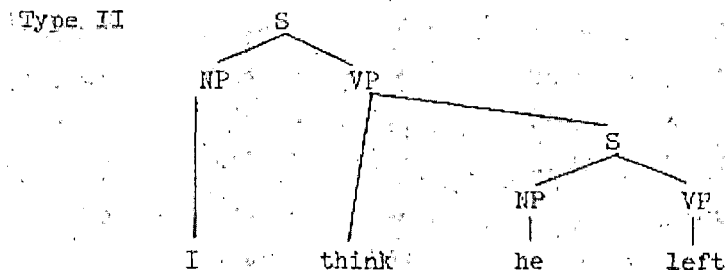
(16) #John wasn't supposing that he left.

These examples show that subjects of evidentials may be agents or non-agents when Neg Raising does not apply, but only non-agents when Neg Raising does apply. Thus examples (13) and (15), in which the subjects must be agents, cannot be paraphrased by examples (14) and (16), with Neg Raising, because in order for them to be paraphrases, the subjects of (13) and (15) cannot be agents. In G. Lee (1970) it is argued that certain non-agent subjects are raised by a transformation from by-clauses (adverbs). Since, as we have seen, some subjects of evidential verbs cannot be agents, it is not unreasonable to suppose that such subjects arise by transformation from a lower clause.

4. The relations between Neg Raising, parenthetical constructions, and agentivity can be explained by assuming that some evidential verbs come from underlying adverbs. For example, the underlying structure of I think he left would be:



An optional transformation would create a matrix sentence out of the adverb. This is Adverb Preposing.



When Adverb Preposing does not apply, a parenthetical is left. Evidential verbs with agentive subjects arise from an underlying structure of Type II directly. Thus all of the examples (13) to (16) must have an underlying structure of Type II, and they are not paraphrases because the element not comes from the lower clause in (13) and (15), but from the higher clause in (14) and (16). Non-evidential parentheticals then come from underlying structures of Type II by a transformation which includes a mechanism for stressing the parenthetical verb and inserting pause. This transformation is Ross' Sentence Lifting, or Slifting:



In the output of Slifting, the two sentences are independent of each other structurally, while in underlying structure Type I above, the I think is not independent of the preceding sentence, but dominated by it. These structures accurately reflect the observation that pause and secondary stress separate non-evidential and agentive evidential parentheticals from the preceding sentences, but pause and secondary stress do not separate non-agentive evidential parentheticals from preceding sentences (Ross, to appear).

5. In G. Lakoff (1970), a rule of Adverb Preposing is given which is similar to the rule described above. The motivation for Lakoff's rule is that if-clauses may be optionally moved to the front of their clauses the same as certain adverbs.

(17) He left in the evening.

- (18) =In the evening he left.
 (19) He will leave if you take off your clothes.
 (20) =If you take off your clothes he will leave.

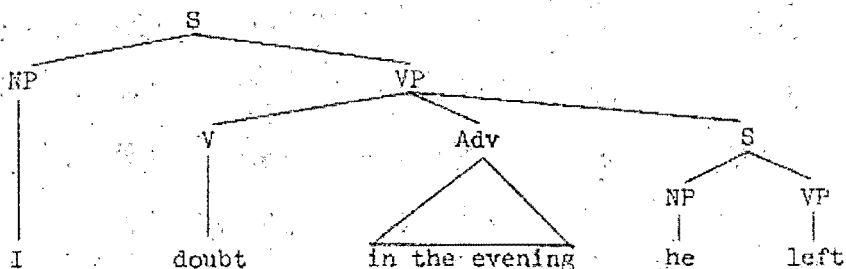
Thus, if-clauses are seen as adverbs. However, it seems that some verbs permit Adverb Preposing to a higher clause than the one from which it arises. These verbs are the evidentials.

- (21) I think that he left in the evening.
 (22) =In the evening I think he left.
 (23) I think he will leave if you take off your clothes.
 (24) =If you take off your clothes I think he will leave.

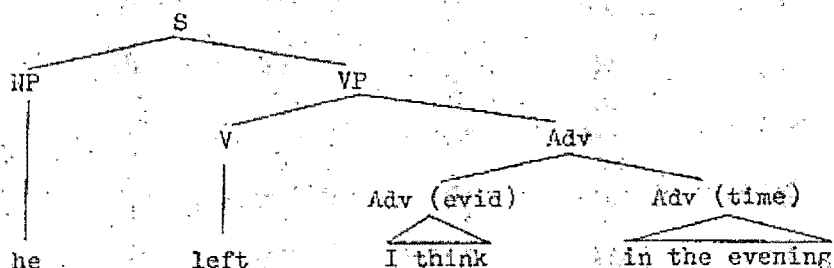
The paraphrase relationships between sentences (21) and (22) and between sentences (23) and (24) are dependent on the occurrence of an evidential verb, as can be seen from the following examples:

- (25) I doubt that he left in the evening.
 (26) #In the evening I doubt that he left.
 (27) I doubt he will leave if you take off your clothes.
 (28) #If you take off your clothes I doubt he will leave.

It is clear from these examples that if the evidentials are considered as derived from adverbs, then it can be stated definitely that Adverb Preposing can move an adverb only to the beginning of its own clause. Sentence (26) must then have an underlying structure like:



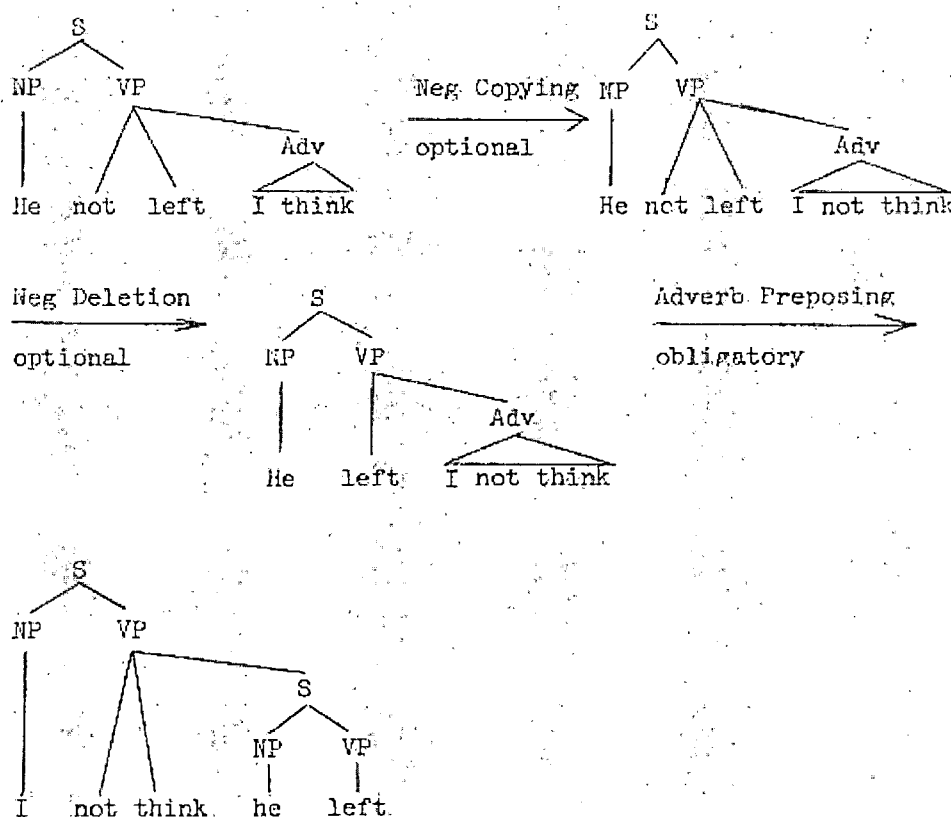
Sentences (21), (22), and In the evening he left, I think can all be derived from the following underlying structure, depending on which of the three adverbs is preposed.



6. Klima (1964:267) gives a rule of Neg Incorporation into Adverbs which works optionally for cases in which not precedes the affected adverb. This rule plus the Adverb Preposing rule suffice to explain all cases of apparent "neg raising," plus the occurrence of certain grammatical double negatives.

- (29) He didn't leave, I think.
 (30) =He didn't leave, I don't think.
 (31) *He left, I don't think.

The synonymy of sentences (29) and (30) suggests that the Neg Incorporation transformation is actually a two-fold process. First, neg is copied into the adverb, then the original neg is erased. But if the original neg is erased, then Adverb Preposing must apply in order to avoid sentences such as (31).



These relations are similar to those which may occur with unit adverbs such as ever.

- (32) He didn't leave ever.
 (33) =He didn't leave never.
 (34) *He left never.
 (35) =Never did he leave.

This analysis is the exact opposite of that proposed by Ross (to appear) in which the neg originates in the lower clause, and is then copied into the higher clause. Slifting follows, and finally Not Deletion. The faults of this analysis are, first, that it is not sensitive to agentivity, and, second, that it presupposes that (36) and (37) are paraphrases, which they are not.

(36) I think Max isn't here.

(37) I don't think Max isn't here.

Since Slifting does not apply in (37), it might be argued that obligatory Not Deletion follows. However, then the Not Deletion rule must be sensitive to whether or not (37) represents an instance of Not Copying, as opposed to true double negation. In addition, the analysis by evidential adverbs enables one to restrict Slifting to positive higher clauses without reference to whether or not the verb is evidential.³

7. Previously, I argued that some of the evidential verbs must be understood as constituting a higher clause, just in case the subject is agentive. Thus, sentence (38) may underlie sentence (39).

(38) He will leave if he wants, I believe.

(39) =If he wants, I believe he will leave.

But if the I of believe is agentive, then the adverb if he wants may modify I believe rather than he will leave, and the I believe must originate in a higher clause. In strings such as sentence (40), only the I may be non-agentive, and he is definitely agentive. Sentence (40) may be paraphrased by sentence (41).

(40) I think that he thinks John will leave.

(41) =He thinks John will leave, I think.

But the parenthetical in (41) must be an adverb from the clause headed by he thinks, as can be shown by negation.

(42) He thinks that John won't leave, I think.

(43) =I don't think that he thinks John will leave.

Therefore, evidential adverbs must modify the highest verb in the sentence, whether it is an agentive evidential verb or not.

8. From the above discussion, it is apparent that parenthetical evidentials share many of the properties of adverbs. First, they satisfy, along with true adverbs, the structural analyses of two of the rules which we have been discussing: Neg Incorporation into Adverbs and Adverb Preposing. Second, they follow the constraint that limits adverbs to only one adverb of any particular type per deep clause. Thus sentences with more than the manner adverb, for instance, are ungrammatical.

(44) *He gracefully played the piano beautifully.

Evidential parentheticals also obey the constraint.

(45) He left, I suppose I believe.

In (45), only the I believe can be an evidential adverb, since I suppose is unambiguously agentive and is preceded by pause.

However, evidential parentheticals, along with the if-clauses considered before, do not modify only the main verb of the sentence as do true adverbs, but the entire sentence. Thus, adverbs such as in the evening modify only the verb came in sentence (46). But I think in sentence (47) modifies not only came, but the subject of the sentence as well.

(46) He came in the evening.

(47) He came I think.

If this difference is to be reflected in theory, then evidential adverbs must be viewed as arising from some higher node. Fillmore (1968) provides an appropriate one, when he analyzes sentences into modalities plus propositions: S + M + P. Propositions are expanded into verbs with their appropriate cases, while the modalities carry information which relates to the entire sentence. An example of this type of information is tense, which must later be attached to the verb by transformation. Since evidentials also relate information about entire sentences, they too may be regarded as instances of modality. The existence of an evidential mood in languages such as Latvian, which use them for relating events whose occurrence is questioned by the speaker, shows the validity of this sort of analysis. In Latvian, this instance of M is realized as an inserted verb infinitive /āsuat/ followed by a past active participle.⁴ In English, this M is realized as an adverbial element.⁵

Footnotes

¹The verb understand is an exception, since it can occur parenthetically without stress and pause, yet does not participate in Neg Raising. I cannot rationalize the discrepancy.

²John Kimball of the University of California at Santa Cruz (ms 1970) also noticed a semantic distinction between instances of the verb believe with and without Neg Raising. His reportive and expressive categories correspond roughly to the agentive and non-agentive distinction that I make use of. Although his structural solution to the problem of Neg Raising is different from mine, his discussion of the semantic issues is more clear and insightful. Our general conclusions are practically identical.

³Ross notes as one of the difficulties of his analysis that the restrictions on Not-Hopping and Shifting are identical but must be stated twice--once for each transformation.

⁴Valdis J. Zeps of the University of Wisconsin mentioned this fact about Latvian during his lectures at the 1970 Linguistic Institute held at Ohio State University.

⁵I wish to express my appreciation to Gregory Lee and James Heringer, who offered many helpful suggestions and examples during the initial phase of this work, and to Arnold Zwicky, who helped put this paper into its final form.

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